CLAIMS

1. A dental curing light, comprising:

an elongate housing having a proximal end and a distal end;

a light source disposed at the distal end of the housing;

electronic circuitry disposed at least partially within the housing between the proximal end and the distal end;

a metallic heat sink portion adjacent to the light source and extending partially through the housing; and

a polymer-based heat sink portion adjacent to the metallic heat sink portion and extending through an additional portion of the housing.

2. A dental curing light as recited in claim 1, further comprising an insulating layer separating at least a portion of the metallic heat sink portion from the housing.

3. A dental curing light as recited in claim 2, the insulating layer comprising an air gap.

4. A dental curing light as recited in claim 1, the metallic heat sink portion comprising at least one of aluminum, brass, copper, steel, or silver.

5. A dental curing light as recited in claim 1, the metallic heat sink portion comprising a thermally-conductive ceramic comprising at least one metal oxide.

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6. A dental curing light as recited in claim 1, the light source comprising at least one LED.

7. A dental curing light as recited in claim 1, further comprising a lens sized and configured so as to focus light emitted from the light source in a desired manner.

8. A dental curing light as recited in claim 1, the light source being powered by and external power source.

9. A dental curing light as recited in claim 1, further comprising an integral battery pack for powering the light source.

10. A dental curing light as recited in claim 1, further comprising one or more controls contingent to selectively activate the light source.

11. A dental curing light as recited in claim 1, the polymer-based heat sink portion making physical contact with the electronic circuitry.

12. A dental curing light as recited in claim 11, the polymer-based heat sink portion at least partially surrounding the electronic circuitry.

13. A dental curing light as recited in claim 1, the heat-conductive polymer heat sink portion extending at least partially through a portion of the housing design so as to be gripped by a user of the dental curing light.

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14. A dental curing light as recited in claim 1, the polymer-based heat sink portion comprising at least one of an epoxy-based or silicone-based resin.

15. A dental curing light as recited in claim 1, the polymer-based heat sink portion comprising at least one polymer and at least one heat conductive filler.

16. A dental curing light as recited in claim 1, the polymer-based heat sink portion comprising at least one of a solid, liquid or gel.

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17. A dental curing light, comprising:

an elongate wand housing having a proximal end and a distal end;

at least one LED light source disposed at the distal end of the housing;

electronic circuitry at least partially disposed within the wand housing between the proximal end and the distal end;

a metallic heat sink portion adjacent to the LED light source and extending partially through the wand housing;

a polymer-based heat sink portion adjacent to the metallic heat sink portion and extending through an additional portion of the wand housing.

18. A dental curing light as recited in claim 17, the polymer-based heat sink portion comprising a filled epoxy-based resin.

19. A dental curing light as recited in claim 17, the heat-conductive polymer heat sink portion at least partially surrounding the electronic circuitry.

20. A dental curing light as recited in claim 17, further comprising an insulating layer separating at least a portion of the metallic heat sink portion from the wand housing.

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21. A dental curing light, comprising:

an elongate wand housing having a proximal end, a distal end, and a hollow interior portion;

a light source disclosed at the distal end of the elongate wand housing;

electronic circuitry at least partially disposed within the interior hollow portion of the elongate wand housing between the proximal end and the distal end;

a metallic heat sink portion adjacent to the light source and extending through a portion of the hollow interior portion of the elongate wand housing;

and an epoxy-based heat sink portion adjacent to the metallic heat sink portion and extending through an additional portion of the hollow interior portion of the elongate wand housing.

22. A dental curing light as recited in claim 21, the epoxy-based resin heat sink portion at least partially surrounding the electronic circuitry.

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